

**MINUTES
of the
FIFTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**October 27-28, 2014
Rotunda Room, University of New Mexico Science Technology Park
Albuquerque**

**October 29, 2014
Fidel Center, New Mexico Institute of Mining and Technology
Socorro**

The fifth meeting of the Science, Technology and Telecommunications Committee for the 2014 interim was called to order by Senator Michael Padilla, chair, on Monday, October 27, 2014, at 9:13 a.m. in the Rotunda Room of the University of New Mexico (UNM) Science Technology Park in Albuquerque.

Present

Sen. Michael Padilla, Chair (10/27, 10/28)
Rep. Carl Trujillo, Vice Chair
Rep. Kelly K. Fajardo (10/27, 10/28)
Rep. Roberto "Bobby" J. Gonzales (10/27, 10/28)
Sen. Bill B. O'Neill (10/27)
Rep. Debbie A. Rodella (10/27)
Sen. John C. Ryan (10/27, 10/28)
Rep. James E. Smith (10/27, 10/28)
Rep. Luciano "Lucky" Varela (10/27)
Rep. Monica Youngblood (10/28)

Advisory Members

Sen. Carlos R. Cisneros (10/27)
Sen. Ron Griggs
Sen. Richard C. Martinez (10/27, 10/28)
Rep. Bill McCamley (10/27)
Sen. Steven P. Neville (10/28)
Rep. Jane E. Powdrell-Culbert

Absent

Sen. William F. Burt
Rep. Jason C. Harper
Sen. Linda M. Lopez

Rep. Stephanie Garcia Richard
Sen. Phil A. Griego
Sen. Timothy M. Keller
Sen. William H. Payne
Rep. Nick L. Salazar
Rep. Don L. Tripp
Sen. Peter Wirth

Guest Legislator

Sen. Nancy Rodriguez (10/27, 10/28)

(Attendance dates are noted for members not present during the entire meeting.)

Staff

Gordon Meeks, Legislative Council Service (LCS)
Ralph Vincent, LCS
Carolyn Ice, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file and posted on the legislature's web site.

Monday, October 27

Senator Padilla called the meeting to order and thanked UNM for hosting the committee. The meeting began with introductions from members of the committee and LCS staff.

Welcome to the UNM

Joseph Cecchi, dean, School of Engineering (SOE), UNM, welcomed members of the committee to the university and gave an overview of the current status of UNM's SOE. Dean Cecchi told the committee that the SOE has a research-driven focus. Out of 104 tenure-track faculty, the majority are active as both teachers and researchers. Very few members of the SOE are solely professors.

Dean Cecchi testified that the SOE currently receives about \$16 million from the state. In addition to money accrued from the state, research funding for the SOE is about \$30 million. With its current budget, the UNM SOE is one of the top 15 engineering programs in the country.

Currently, the enrollments in the SOE are strong and increasing. The overall engineering program for the 2014-2015 academic year experienced a significant increase from the 2013-2014 academic year. There are eight accredited baccalaureate programs, 13 master's programs and 10 doctorate programs offered in addition to eight interdisciplinary research-based degree programs and nine affiliated research centers. Dean Cecchi told the committee that the school is a vital and engaged partner in strategic collaborations and commercial applications. The UNM SOE is requesting \$4.7 million from the legislature for renovations to Farris Engineering Center, which houses 35% of the engineering programs.

Questions by and discussion topics of the committee members included:

- interaction with public schools;
- the new math sequence for incoming UNM freshmen;
- cybersecurity research;
- sources of exterior contracts;

- dual appointments of faculty between universities and national laboratories;
- thrust areas;
- business planning;
- commercialization and entrepreneurship;
- obstacles to commercialization;
- interaction with economic development entities around the state;
- angel investors;
- reasons why some companies/businesses do not work with UNM;
- percentage of in-state students;
- the Ph.D. completion rate;
- retaining graduates in the state; and
- variance in statistics.

Clinical Translational Science Program

Richard Larson, executive vice chancellor for the Health Sciences Center and vice chancellor for research, UNM, presented to the committee on the Clinical and Translational Science Center (CTSC) at UNM. Dr. Larson noted the center's title as the National Institute of Health's (NIH's) most prestigious award. The center at UNM is one of 62 centers with a similar distinction in the country. The purpose of the center is to build health care research, encourage public-private partnerships, engage communities throughout New Mexico and target key health priorities.

Dr. Larson testified that CTSC research brings hope to patients, "seeds" funding for new ideas, provides research infrastructure and supports other center and programmatic efforts. CTSC projects are leveraged into additional research activity at the university. The CTSC provided \$2.9 million in pilot funding over the first four years. Thirty-eight new private companies were also either spun off from the university or used university technology to start up. The CTSC is hoping to build research capacity beyond New Mexico by establishing regional partnerships.

Questions by and discussion topics of the committee members included:

- funding cycle length and renewal;
- current projects;
- the corporate success rate of CTSC business relations;
- stem cell research bill;
- health priorities;
- investigation of obesity and diabetes; and
- jobs provided by the center.

Brain Safe

Kent A. Kiehl, Ph.D., executive science officer, director of mobile brain imaging, UNM, gave the committee a presentation on the Brain Safe Project and explained why it is needed

within UNM athletics and other universities around the country. Dr. Kiehl began by defining sports-related traumatic brain injury and concussion to the committee. A concussion is a traumatic brain injury that alters brain function. Its effects are usually temporary, but residual impairment can last for years after the initial incident of injury. Symptoms can include headaches, memory and attention problems and issues with balance, depression and anxiety, all of which can lead to complications inside and outside the classroom as well as on and off the field.

Dr. Kiehl told the committee that there are approximately 8,500 recorded concussions per year for collegiate athletes. From the initial data collection, the program has identified football and men's lacrosse as the sports with the highest incidence of occurrence. Currently, there are only eight states that require brain magnetic resonance imaging (MRI) prior to participation in professional sports. The Brain Safe Project hopes to expand this requirement to other states to ensure the safety and health of athletes in all levels of competition.

The Brain Safe Project is a concussion testing program and collaboration between UNM and the Mind Research Network. The program provides a comprehensive MRI assessment of brain health collected as part of an annual physical exam for all athletes and a detailed within-subject comparison of baseline scan with follow-up scan after the concussion. The Brain Safe Project is meant to serve as a supplement to the standard procedures for concussion assessment and does not replace standard medical procedures. Through participation with the program, athletes receive a baseline assessment and an annual MRI.

During its first year at UNM, the program has scanned numerous athletes involved in various programs. Dr. Kiehl hopes to continue to collect data and expand the database. The Brain Safe Project also plans to seek grant support from the NIH, the U.S. Department of Defense, the National Conference of Collegiate Athletes and the National Football League and to ultimately publish literature on incidental findings and expand the program to other universities and high schools.

Questions by and discussion topics of the committee members included:

- sports with highest rates of incidents;
- involvement with local high schools;
- the role of insurance companies in this program;
- benefits of research;
- the impact on educational performance; and
- discussion of concussions with parents and coaches.

Public Television

Franz Joachim, general manager and chief executive officer, KNME-TV; Glen T. Cerny, executive director, University Broadcasting, New Mexico State University; and Duane W. Ryan, director of broadcasting, KENW-TV, DT and FM and KMTH-FM, gave the committee a

presentation on New Mexico public television and its role in education. New Mexico public television consists of three independent Public Broadcasting Service (PBS) affiliates: KRWG, Las Cruces; KENW, Portales; and KNME, Albuquerque/Santa Fe. The presenters told the committee that public television is planning on requesting capital outlay funding during the 2015 legislative session. More specifically, they are asking for a \$2.25 million appropriation to be divided among the stations to replace broadcast master control infrastructure and ensure uninterrupted service to viewers across the state.

The combined coverage area of New Mexico public television currently provides more than 95% of New Mexicans with free service, with an average of 97 hours a week of educational programming for children. The educational programming features content aimed to encourage involvement in science, technology, mathematics and engineering. Public television also delivers emergency alerts to the entire state. The improvements to the master control are necessary to simultaneously record and play back hundreds of programs for multiple broadcast, cable and satellite channels. The equipment upgrades and replacements are inevitable even with careful maintenance. The equipment was originally purchased in 2004 with a general obligation bond.

Questions by and discussion topics of the committee members included:

- funding;
- Indian land coverage;
- citizen support for public television;
- legislative strategy;
- endorsements and testimonials from members for public television;
- marketing;
- public service;
- equipment for replacement funding;
- funding for administration; and
- Texas viewership of New Mexico public broadcasting.

House Memorial 17, Electric Cooperative Rights of Way

Representative Trujillo introduced the topic of high rate increases by Jemez Mountain Electric Cooperative. House Memorial (HM) 17, sponsored by Representative Trujillo during the last legislative session, asked the Public Regulation Commission (PRC) "to report on the allocation and recovery of access fees, charges and trespass fines paid by the electric distribution cooperatives to any Native American governmental entity and to increase awareness of recent developments in Native American access agreements affecting the cooperative's ability to provide electricity at the lowest feasible cost".

The memorial was created in response to the fact that New Mexico's electric distribution cooperatives are the primary source of electric power for rural communities throughout the state and the cost of monthly utility bills has increased steadily over the years and will increase

dramatically after imposition of recently contracted new access charges by pueblo governments, which will make it increasingly difficult for many customers to afford electricity. HM 17 requested that the PRC report to the appropriate committee regarding its policies relating to the recovery and the allocation of Native American access costs by electric distribution cooperatives as the foundation for further action.

Representative Trujillo spoke about the geographic difficulties in his district, which made it a difficult area to determine costs and rates. Representative Trujillo also emphasized the importance of resolving these issues with the PRC.

The PRC provided an itemized list of responses to the requests included in HM 17.

Questions by and discussion topics of the committee members included:

- what other cooperatives have done around the state;
- how the legislature can assist injured bodies; and
- assistance from the federal government.

Electric Grid Stability

Bruno E. Carrara, PRC, presented to the committee the timeline of the February 2011 severe weather event and the lessons learned from the aftermath of the event. In response to the natural gas curtailment crisis, the PRC initiated two actions: 1) it undertook a formal investigation to examine the New Mexico Gas Company's (NMGC's) actions before, during and after the severe storm; and 2) it created a separate, informal task force to review the reasons behind the gas supply failure and recommend actions to mitigate or avoid future problems in an event of a similar nature. Mr. Carrara reported that the docket was closed in December 2012 after the PRC found the NMGC acted reasonably and in accordance with applicable rules and regulations.

To review, Mr. Carrara went through the events that led to the natural gas curtailment, which included the cold arctic storm that affected New Mexico and several other states. Due to an increase in electricity and gas demand, some electric generating plants shut down, and pressures in the in-state pipelines dropped, prompting NMGC to cut off gas to northern New Mexico communities.

Mr. Carrara told the committee that the majority of the recommendations have been implemented through new regulations and through the creation of a 24-hour call-in and online utility outage reporting system.

Questions by and discussion topics of the committee members included:

- the need for more diversity in fuel;

- the need to hear from Public Service Company of New Mexico (PNM), the El Paso Electric Company and cooperatives; and
- electricity and gas demands.

Recess

The meeting recessed at 3:55 p.m.

Tuesday, October 28

Project Spreadsheet Update

Darryl Ackley, secretary of information technology, Department of Information Technology (DoIT), provided the committee with an overview of the DoIT and a status report on its current activities. His presentation reviewed the Enterprise Project Management Office's (EPMO's) projects' financials and their respective estimated completion dates.

The EPMO is responsible for providing support, guidance and oversight on information technology projects and procurements to promote improved outcomes. Secretary Ackley told the committee that the Automated System Program and Eligibility Network (ASPEN) is currently in the close-out phase and was completed under budget. All other projects included in the presentation were considered "green", meaning that the project was progressing on the projected schedule and nearing completion if not already completed. However, the Human Services Department (HSD) State Based Marketplace Project was highlighted in yellow after the New Mexico Health Insurance Exchange voted on July 25, 2014 to delay go-live for one year. Currently, the DoIT and the health exchange are working together to rebaseline the project to align with the new rollout date in November 2015.

For fiscal year (FY) 2015, the EPMO has 24 projects within its portfolio. There are nine projects closed with a combined budget of \$118,693,574. All of the projects accomplished business objectives within budget, with 78% of projects complete or within the baseline schedule.

Questions by and discussion topics of the committee members included:

- projects in different stages of certification;
- concerns for projects that are not actually "green";
- concerns for taxpayers;
- itemized requests from agencies;
- defining the different stages of the budget; and
- how reflective these budget numbers are.

HSD ASPEN Project Status

Marilyn Martinez and Kathy Martinez, HSD, spoke more extensively on the ASPEN Project and its current status. They began with a brief history of Project Genesis, which was

developed with older technology and is at risk for failure. The system did not support automated workflows and could not integrate assistance programs and services.

Concerning the planning of the ASPEN Project, there were over 30 federal and state interface partners involved as the DoIT maintained the mainframe environment and stabilization effort. ASPEN is designed with N-Tier architecture and virtualized infrastructure. Its transfer system is adapted from the state of Michigan and modified to meet the needs and requirements of New Mexico.

The implementation cost of ASPEN was \$107.5 million with annual maintenance and operations estimated at \$17.4 million. The total cost of ownership for 10 years is \$281.5 million.

Questions by and discussion topics of the committee members included:

- the ASPEN budget;
- the length of projection;
- upgrades meeting future demands;
- the need for an additional contract;
- the lifetime of ASPEN;
- staffing budget as a component of ASPEN or separate line item in agency budget;
- the purpose of the works program; and
- cybersecurity components.

ONGARD Project Status

Secretary Ackley and John Monforte, deputy secretary, Taxation and Revenue Department (TRD), gave the committee an overview on the current status of the Oil and Natural Gas Administration and Revenue Database (ONGARD) system. Mr. Monforte began with the history of the system. The ONGARD Service Center (OSC) was created by a joint powers agreement in 1990. With \$18 million, the first system was built. The ONGARD, which is responsible for managing oil and gas revenue for both the TRD and the State Land Office (SLO), has collected and distributed over \$22 billion since its inception.

The ONGARD Tri-Agency workflow begins with the SLO then goes on to the Energy, Minerals and Natural Resources Department's Oil Conservation Division for well initiation, well completion and volume reporting. From there, either the TRD determines volume based on tax collection and distribution or the SLO determines volume based on royalty collection and distribution.

The ONGARD Stabilization Project was created to test and migrate the system to a more current IBM mainframe platform, which improved operational stability. The project cost \$1.7 million and was successfully closed in July 2014. During FY 2014, the TRD collected \$1.3 billion across 1,000 active remitters, and the SLO collected \$817 million for public institutions and hospitals.

ONGARD modernization, on the other hand, is needed to solve business needs as well as to simplify tax and royalty processing. Currently, the agencies are conducting an end-to-end business process analysis (BPA) to define the future capabilities and processes of ONGARD. The BPA is expected to be complete in late 2015.

For FY 2016, the OSC is requesting \$33 million from the Computer Systems Enhancement Fund. The current ONGARD system is antiquated and inflexible in terms of its technology infrastructure, which inhibits the agencies from staying current with the changes taking place in the oil and gas industry. In 2013, oil and gas employed 22,200 people in New Mexico and experienced a payroll increase of \$112 million from 2012 to 2013. In New Mexico, oil and gas jobs pay 84% more than the annual average private-sector wage of \$74,105.

Upgrades to the current system will help New Mexico keep up with the changing industry and presents the opportunity to tighten compliance with tax and royalty returns and collection.

Questions by and discussion topics of the committee members included:

- other systems as models;
- the uniqueness of ONGARD;
- clarity on horizontal hydraulic fracturing;
- the delay on upgrading ONGARD;
- the lifespan of the new system;
- continuity between the old and new system;
- the relationship of gasoline tax;
- the life-cycle cost of the system; and
- the return of investment.

SLO Land Information Management System (LIMS) Project Status

Secretary Ackley and Martin Davis, chief information officer, SLO, presented to the committee the status of the LIMS Project. Mr. Davis began by stating the agency's mission, which includes generating optimum revenues and exercising sound financial management for the benefit of beneficiaries while creating jobs for New Mexicans. The SLO manages 13 million subsurface and 8.5 million surface acres held in trust for the beneficiaries of New Mexico, with approximately \$2 billion in revenue from the past three years.

The SLO uses ONGARD to manage both subsurface and surface land; however, it cannot fully accommodate surface leasing due to limitations in the data model and system design. The land grid information is also incomplete and based on a nominal 40 acres, with critical surface land management function absent. User interface is inefficient, and changes to ONGARD are costly. The LIMS Project plans to replace current land management with a multi-tier web application that will provide bidirectional interfaces with ONGARD with shared data.

The LIMS will provide the following:

- needed functionality for surface and minerals land management and leasing unavailable with ONGARD;
- a single access point for land information;
- intuitive and content-rich geographic information system integration;
- improved data integrity and increased staff efficiency;
- conversion of critical paper records; and
- a foundation for adding constituent services.

Questions by and discussion topics of the committee members included:

- the extent of leases;
- ONGARD as the existing financial accounting system;
- the thoroughness of information on the LIMS of divided estate titles;
- the cost of the total contract; and
- migration of data from hard copy to digital format.

Telecommunications Competition

Senator Padilla began the discussion on parity of telecommunications.

Leo Baca, CenturyLink, told members of the committee that he met with concerned parties on Senate Bill 152 to develop a consensus. Senate Bill 152, introduced by Senator Griego during the last legislative session, amends and repeals sections of the New Mexico Telecommunications Act to equalize regulation among incumbent local exchange carriers. Mr. Baca told members of the committee that feedback from the parties expressed a similar interest to be involved in the legislation. There will not be much of a difference in the new bill, aside from changes to improve clarity, especially in how it will affect competitors.

Questions by and discussion topics of the committee members included:

- amendments from last year being included;
- the work force needed to provide this service;
- intent to prefile;
- overall infrastructure;
- investment in broadband;
- management meeting demand;
- service quality breakage;
- reduced regulation throughout the state;
- discrepancies in service throughout the state; and
- emphasis on listening to constituents.

Directed Energy

Mark Niece, executive director, Directed Energy Professional Society, presented the topic of directed energy in New Mexico. In 1999, the Directed Energy Professional Society was

established to foster research and development of directed energy technology for national defense and civil applications. Directed energy technology emits highly focused energy to a target. Examples of directed energy include high-energy laser and high-power microwave technologies.

Currently, the U.S. Department of Defense contributes \$440 million annually to directed energy research and development across the country. A majority of the funding goes to national defense projects, but Mr. Niece spoke of possible migration to more civilian applications in the future.

The Directed Energy Professional Society goals include the following:

- to foster communication within the directed energy community;
- to enhance education through scholarship and internships;
- to recognize outstanding contributions to directed energy research through a fellows program; and
- to publish and archive directed energy achievements in the *Journal of Directed Energy*.

Questions by and discussion topics of the committee members included:

- the hardware cost of the program;
- the effect on Spaceport America;
- tie-ups on traffic on U.S. 70 during rocket launching;
- solid state technology; and
- common denominators among companies that discourage companies from locating in New Mexico.

Telehealth Update

Dr. Dale Alverson, medical director, Center for Telehealth and Cybermedicine Research, UNM, gave the committee an update and overview of the current status and future of telemedicine and e-health at UNM. Dr. Alverson began by distinguishing the differences between telemedicine and telehealth due to the frequency of the terms being used interchangeably. Telemedicine is the use of advanced telecommunications technologies to exchange health information and provide health care services, while telehealth encompasses health information exchange and a spectrum of health information technologies. He continued by defining e-health as health care practice supplemented by electronic processes and communication.

Telehealth and e-health are used in a variety of different platforms, such as clinical, educational, research and administrative services; health information exchanges; and enhanced disaster response. New Mexico currently faces gaps in access to health services in rural areas of the state. Telehealth and health information technologies are being used to combat these gaps and improve access to health care in underserved areas. Telehealth currently provides training

and support for health care professionals and improves health care service quality by providing access to electronic medical records and health information exchange. Telehealth is being used in numerous specialties, including obstetrics and gynecology, ophthalmology, neurology and trauma care.

Telemedicine creates a virtual consultation and provision of service between physician and patient while the health information exchange provides a consolidated medical record from a variety of electronic health records and sources. The combination of telemedicine and health information exchange provides improved access to health care while also providing better care through improved awareness of the patient's overall health and prior history. Another benefit involves the potential decrease in duplication of tests, which will improve overall costs of care.

The anticipated outcomes of this program include:

- improved access to clinical care;
- improved health outcomes;
- decreased costs;
- reduced duplication of services;
- increased federal funding contributions;
- improved education and training capabilities; and
- successful optimization of coordination across the New Mexico telehealth grid.

Telehealth requires affordable and quality broadband to provide services. With the exception of Albuquerque and some larger health care provider organizations, most providers are operating at a minimum amount of bandwidth. Current barriers of expansion and development of telehealth in the state include: 1) cost of connectivity; 2) facility readiness; 3) resistance of health care providers; and 4) reimbursement challenges. Dr. Alverson recommended designating the New Mexico Telehealth Alliance as the central coordinating agency for telehealth within the state and suggested requesting \$500,000 for the first year.

Questions by and discussion topics of the committee members included:

- medical records systems;
- expansion into school-based health centers;
- different telecommunications providers;
- the health information exchange; and
- the procurement entity.

Recess

The meeting recessed at 3:29 p.m.

Wednesday, October 29

New Mexico Institute of Mining and Technology (NMIMT) Overview

Julie Ford, NMIMT, welcomed the committee to the campus and gave a brief overview on the status of NMIMT and its research endeavors. Dr. Ford told the committee that NMIMT is committed to economic prosperity and technological development achieved by encouraging leadership and service in all of its students. Dr. Ford told the committee that for the fall 2013 semester, 74% of the undergraduate population identified themselves as engineering students, with 25% involved in science and 1.1% either undecided or in general studies. Currently, 500 out of 2,100 students are employed in research-related positions, with many beginning these positions in their freshman year.

Peter Anselmo, NMIMT, told the committee that there is a gap between research being conducted at NMIMT and commercialization. Dr. Anselmo spoke about the entrepreneurship university model implemented at NMIMT, which values unique student experiences and outcomes in addition to providing researcher connections with markets and incubator services without some of the costs.

In response to the gap between research and commercialization, the Center for Leadership in Technology Commercialization was created at NMIMT. The Lab Commercialization Project at NMIMT pairs a student team with Lawrence Livermore National Laboratory (LLN). Students initiated customer contacts, worked with LLN personnel and worked to find financing for modifications. From this partnership with LLN, NMIMT hopes to be a model for commercialization of LLN technologies and other student-designed projects.

Questions by and discussion topics of the committee members included:

- other universities aligned with the entrepreneurship model;
- House Bill 36;
- Jobs Council goals; and
- partnerships with other in-state labs.

David Grow, assistant professor of mechanical engineering, gave a brief presentation on the Heliostat Control System designed by students at NMIMT. A heliostat is a device that uses a mirror to concentrate the sun's rays at a specific point. The federal Environmental Protection Agency (EPA) funded the project. The students were responsible for fabricating two prototypes to demonstrate a unique ballast control system. The novel feature of their design is the water balance system that is used to pivot the mirror, which also greatly reduces the cost of constructing a heliostat. A simple pump is used to transfer water from each side.

The students received Phase I funding in 2014 from VentureWell, a higher education network, and have already submitted a proposal for Phase II funding to continue the fabrication and testing of their heliostat.

Snezna Rogelj, professor, presented to the committee her research on a cancer treatment drug conducted at NMIMT. Dr. Rogelj began by testifying that cancer is the second-leading cause of death in the United States, with treatment costing over \$100 billion per year. Chemotherapy, radiation and a combination of the two are often used to treat different forms of cancer; however, chemotherapy often fails due to the patient's cells developing a resistance against the drug, making treatment ineffective.

Paclitaxel is a common drug used in chemotherapy regimes. Rigidin, a new drug, has a similar mechanism of action, but is insensitive to efflux pumps and development of resistance. Rigidin has been patented through NMIMT. The AKS hydroxamic acid family has also been shown to stop cancer cell replication locally unlike chemotherapy and radiation. The AKS hydroxamic acid family also does not develop a resistance and is patented through NMIMT. In addition to Rigidin and the AKS hydroxamic acid family, the IM9 series has also been developed. The IM9 series is activated by light and allows localized treatment of cancer cells. It kills the cells completely and may also immunize the patient against future cancers.

Questions by and discussion topics of the committee members included:

- finances needed;
- current status;
- provisional application;
- provisional to nonprovisional time period;
- the overall time line of the patent; and
- nicotine patches.

Dr. Ford followed with a presentation on aerospace initiatives at NMIMT. Students of all levels currently participate in an aerospace project in which they acquire essential engineering skills and improve the competitiveness of New Mexico educational and industrial sectors.

The Structural Health Monitoring Junior/Senior Design Team is developing structural health monitoring for space structures. The design team had a successful launch in 2013 and is planning a future launch in 2015. The Experimental Sounding Rocket Junior/Senior Design Team competed in an international competition in Green River, Utah. In 2013, the team finished first in the advanced category. The two design teams and the rocket launcher project are all meant to give students experience in aerospace projects and ultimately create new business in the state.

Questions by and discussion topics of the committee members included:

- the commercial space industry;
- Spaceport America;
- publicity of programs and achievements; and
- emphasizing the importance of Spaceport America in New Mexico.

To wrap up the overview of major projects and programs at NMIMT, Srinivas Mukkamala presented on Computational Analysis & Network Enterprise Solutions (CAaNES), which was developed out of NMIMT. CAaNES provides scalable computational intelligent security solutions that protect organizations from cyber attacks. CAaNES's unique core capabilities use iterative feedback learning and contextual intelligence methods to understand potential threats or attacks and not only resolve the immediate problem, but protect the system from future attempts.

Questions by and discussion topics of the committee members included:

- NMIMT's value nationally;
- future plans for the state in science, technology, engineering and mathematics;
- the location of Aperture Center;
- future employment and expansion;
- retaining talent in the state; and
- use/roles of interns.

San Juan Generating Station Update

The EPA has also proposed a clean power plan under the authority of Section 111(d) of the federal Clean Air Act, which requires each state to develop and implement a statewide plan to reduce its carbon dioxide emissions rate to meet state-specific standards. The regional haze plan was created as a response to the EPA's request. With the regional haze plan, PNM hopes to reduce water consumption by about 53% and coal ash generation by 48%, as well as truck traffic and visible plumes. With the implementation and execution of a strong pollution control platform, San Juan Generating Station hopes to meet future environmental regulations as it continues to serve as an important resource for PNM. The regional haze plan also significantly reduces visibility impacts from the station and provides other environmental benefits as it brings New Mexico closer to meeting the EPA's proposed clean power plan.

Michael D'Antonio, PNM, was also in attendance to answer questions from the committee members.

Questions by and discussion topics of the committee members included:

- composition or ownership of haze;
- methods of air sampling;
- the comparison of New Mexico to eastern air pollution;
- consumer feedback;
- energy storage;
- energy billing; and
- renewable portfolio standards limitations.

Elio Motors Issues

Joel Sheltroun, vice president of governmental affairs, Elio Motors, gave the committee an overview of Elio Motors and the challenges the company faces throughout the country. Elio Motors' vehicle is currently classified as a motorcycle, which does not accurately reflect its characteristics. The prototype is currently valued at \$6,800 and gets approximately 84 miles per gallon. Mr. Sheltroun testified that the vehicle handles like an automobile and should be classified as an autocycle.

Mr. Sheltroun told the committee that the vehicle is highly engineered and meets the highest safety standards. The vehicle performs very well in aggressive high-speed maneuvers and is designed with airbags. However, because of Elio Motors' certification as a motorcycle, New Mexico residents and those driving through New Mexico would be required to have a motorcycle endorsement on their driver's licenses and wear a helmet inside the vehicle, which poses a safety concern for consumers. Mr. Sheltroun is asking the legislature to add "autocycle" as a new definition.

Questions by and discussion topics of the committee members included:

- seatbelts;
- helmet requirements;
- specific requests;
- "autocycle" as a definition;
- samples of legislation enacted in other states;
- foundation of low costs;
- preorders from New Mexico;
- dealer representation or direct sales;
- franchise dealers;
- engine size; and
- speed.

Adjournment

There being no further business before the committee, the meeting adjourned at 1:16 p.m.